

## SECTION 01700

### PROJECT CLOSEOUT

#### PART 1 GENERAL

##### 1.1 FINAL INSPECTION

1.1.1 When the Contractor considers the work has reached final completion, written certification shall be submitted to the PM and AE that:

- a. Contract documents have been reviewed.
- b. The project has been inspected for compliance with the contract documents.
- c. The work has been completed according to the contract documents.
- d. Equipment and systems have been tested, balanced and adjusted according to specification requirements, in presence of the County's authorized representative, and operate properly.
- e. All maintenance training of County personnel has been completed according to Section 01731.
- f. The certificate of occupancy has been issued for the project.
- g. The project is completed and ready for final inspection by Loudoun County's Department of General Services.

1.1.2 Two weeks advance notice of final inspection is required.

1.1.3 The PM, AE and additional County representatives will make the final inspection. The PM will develop a list of any items to be corrected and distribute the punch list to the Contractor and the inspection party.

1.1.4 The final inspection shall not be requested until the work is ready for final inspection. If the final inspection is conducted and the work is not in fact ready, the Contractor may be held liable to the County for the cost of conducting a subsequent final inspection.

1.1.5 Should the PM consider the work is not fully complete, the PM shall notify the Contractor in writing of the reasons. The Contractor shall take immediate steps to remedy the

## 2.2 DOOR CONSTRUCTION:

- A. Adhesives: Do not use adhesives containing urea formaldehyde.
- B. Particleboard: Do not use particleboard made with binder containing urea-formaldehyde resin.
- C. Doors for Transparent Finish:
  - 1. Grade: Premium, with Grade A faces
  - 2. Species and Cut: Rift cut, white oak
  - 3. Match between Veneer Leaves: Book match
  - 4. Assembly of Veneer Leaves on Door Faces: Balance match
  - 5. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
- D. Interior Veneer-Faced Solid-Core Doors:
  - 1. Core: Either glued block or structural composite lumber
  - 2. Construction: Five or seven plies with stiles and rails bonded to core, then entire unit abrasive planed before veneering.
  - 3. Construction: Seven plies, either bonded or nonbonded construction.

## 2.3 FABRICATION:

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting. Comply with requirements in NFPA 80 for fire-rated doors.
- B. Factory machine doors for hardware that is not surface applied.
- C. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of door(s) required.
  - 1. Light Openings: Trim openings with moldings of material, manufacturers standard. Match veneer.
  - 2. Louvers: Factory install louvers in prepared openings.

2.4 FACTORY FINISHING:

- A. General: Finish doors at factory that are indicated to receive transparent finish.
- B. Grade: Premium
- C. Finish: Manufacturer's standard finish with performance comparable to AWI System TR-6 catalyzed polyurethane.
- D. Staining: As selected from manufacturer's full range.
- E. Sheen: Satin

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Install doors to comply with manufacturer's written instructions, referenced quality standard, and as indicated.
  - 1. Install fire-rated doors in corresponding fire-rated frames according to NFPA 80.
- B. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.
  - 1. Comply with NFPA 80 for fire-rated doors.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

END OF SECTION

## SECTION 08311 - ACCESS DOORS AND FRAMES

### PART 1 - GENERAL

#### 1.1 SUMMARY:

##### A. This Section includes the following:

1. Access doors and frames

#### 1.2 SUBMITTALS:

- A. Product Data: For each type of access door indicated.
- B. Coordination Drawings: Drawn to scale and coordinating access door and frame installation with ceiling support, ceiling-mounted items, and concealed Work above ceiling.
- C. Samples: For each exposed finish.
- D. Schedule: Door and frame schedule, including types, general locations, sizes, construction details, latching or locking provisions, and other data pertinent to installation.

#### 1.3 QUALITY ASSURANCE:

- A. Fire-Rated Access Doors and Frames: Units complying with NFPA 80 and that are labeled and listed by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction per test method indicated.
  1. Vertical Access Doors: NFPA 252
  2. Horizontal Access Doors and Frames: ASTM E 119
- B. Size and Location Verification: Determine specific locations and sizes for access doors needed to gain access to concealed equipment, and indicate on schedule.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS:

##### A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M

1. Hot-Dip Galvanized Steel: Coat to comply with ASTM A 123/A 123M for steel and iron products and ASTM A 153/A 153M for steel and iron hardware.

##### B. Steel Sheet:

1. Hot-Rolled: ASTM A 569/A 569M, Commercial Steel (CS), Type B; free of scale, pitting, and surface defects; pickled and oiled.

2. Cold-Rolled: ASTM A 366/A 366M, Commercial Steel (CS), or ASTM A 620/A 620M, Drawing Steel (DS), Type B; stretcher-leveled standard of flatness.
    - a. Electrolytic zinc-coated steel sheet, complying with ASTM A 591/A 591M, Class C coating, may be substituted at fabricator's option.
  3. Electrolytic Zinc Coated: ASTM A 591/A 591M, Commercial Steel (CS), with Class C coating and phosphate treatment to prepare surface for painting.
  4. Metallic Coated: ASTM A 653/A 653M, Commercial Steel (CS), Type B, with A60 zinc-iron-alloy (galvannealed) coating or G60 mill-phosphatized zinc coating; stretcher-leveled standard of flatness.
- C. Aluminum Sheet: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy 5005-H15.
- D. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- E. Aluminum Extrusions: ASTM B 221, alloy 6063-T6
- F. Aluminum-Alloy Rolled Tread Plate: ASTM B 632/B 632M, alloy 6061-T6
- G. Drywall Beads: Edge trim formed from 0.0299-inch zinc-coated steel sheet formed to receive joint compound and in size to suit thickness of gypsum panels indicated.
- H. Paint:
1. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements in FS TT-P-664; selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide sound foundation for field-applied topcoats despite prolonged exposure.
  2. Shop Primer for Metallic-Coated Steel: Organic zinc-rich primer complying with SSPC-Paint 20 and compatible with topcoat.

## 2.2 ACCESS DOORS AND FRAMES:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Acudor Products, Inc.
  2. Cendrex, Inc.
  3. Cesco Products
  4. Milcor Limited Partnership
  5. Nystrom Building Products Co.
  6. Williams Bros. Corporation of America (The)

- A. Prior to preparing the bid, the mechanical and electrical subcontractors shall visit the site and familiarize themselves with all existing conditions. Make all necessary investigations as to locations of existing equipment, ductwork, piping, utilities, etc., work to be removed, and all other matters which can affect the work under the Contract. No additional compensation will be made to the contractor as result of his failure to familiarize himself with the existing conditions under which the work must be performed.
- B. See Instructions to Bidders.

1.11. DRAWINGS:

- A. The contract drawings are diagrammatic and indicate the general arrangements of systems and work included in the Contract. Do not scale the drawings. Consult the architectural and structural drawings and details for exact location of structure and equipment; where same are not definitely located, obtain this information from the Architect.

1.12. RECORD DRAWINGS:

- A. The Contractor shall keep accurate records of all deviations in work are actually installed from work indicated. One complete set of contract documents shall be available at the construction site for indicating said deviations.
- B. When work is complete, make one (1) complete "As-Built" set of reproducible mylar sepias, certifying the accuracy of each drawing by endorsement and signature thereon and deliver to the Architect who will, after approval, deliver the record drawings to the Owner.
- C. See General and Supplementary Conditions.

1.13. OPERATING AND MAINTENANCE INSTRUCTIONS:

- A. Upon completion of all work and of all tests, Contractor shall furnish the necessary skilled labor and helpers for operating the systems and equipment for a minimum period of one (1) days of eight hours each, or as otherwise specified. Instruct the Owner's representative fully in the operating, adjustment and maintenance of all equipment furnished. Instruction shall be divided into [four (4)] sessions of [four] hours each, each at a time directed by the Owner.
- B. Contractor shall furnish to the Architect four (4) complete bound sets of typewritten or blueprinted instructions for operating and maintaining all systems and equipment included in this Contract. Each set of instructions shall be contained in a hard-back ring binder properly indexed and labeled. Also provide two complete bound sets of approved shop drawings for all items of equipment utilized on the project. All instructions shall be submitted in draft for approval prior to the final issue. Manufacturers' advertising literature or catalogs will not be acceptable for operating and maintenance instructions.
- C. Instructions shall include a general description of each system together with specific instructions describing routine and emergency procedures required of the building maintenance personnel for operating and maintaining each system. The instructions shall include the name or label, location, and function of all operating equipment and controls, and the location of the electrical service and breaker I.D. numbers. Operating modes and the procedures for indexing each mode shall be clearly described. Include lubrication charts and schedules of frequency of

lubrication for all equipment designating each point of lubrication and type of lubricant to be used. A listing of names, addresses, and phone numbers of the service organizations for each item of equipment and a typewritten maintenance schedule for same shall be included.

- D. The instructors shall be thoroughly familiar with all parts of the installation on which he is to give instruction and shall be trained in operating theory as well as practical operation and maintenance work. Employ factory trained instructors wherever necessary as determined by the Architect.
- E. During the guarantee period, the Contractor shall service all major equipment items provided under this contract, including [chillers, cooling towers, air handling units, boilers, emergency generators,] which require outside service agencies. Service shall not include filter replacement, lubrication of motors and bearings or continuation of water and special system chemical treatment after formal acceptance of the systems by the Architect. Prior to the start of guarantee period, the Contractor shall provide the Architect with a schedule of required maintenance operations for each item of equipment. Submit schedule to the Architect for approval. Thereafter, monthly reports shall be submitted to the Owner for describing actual service provided. Forty-eight (48) hours advance notice shall be given to Owner prior to work required under this Section.

1.14. ELECTRICAL WORK:

- A. Under Division 15 MECHANICAL, provide the following items of electrical work which shall conform with the applicable requirements of the Electrical Division:
  - 1. Temperature control wiring.
  - 2. Interlock wiring for mechanical equipment.
- B. Under Division 16 ELECTRICAL, provide:
  - 1. Power wiring complete from source to motor or equipment junction box, including power wiring through motor starters.
  - 2. Motor control centers or motor starter panelboards.
  - 3. All miscellaneous individual motor starters, local wall mounted control devices, unless noted or specified otherwise.
  - 4. All fire alarm interface wiring including smoke detectors located in mechanical systems.

1.15. FIRE PROTECTION:

- A. As minimum, one five pound CO2 extinguisher shall be provided with each work crew at all times when working within the building.

1.16. SCHEDULE OF WORK:

- A. See General Requirements.

1.17. SERVICE AGENCIES:

- A. All mechanical and electrical equipment suppliers shall have an established authorized service agency located within the Washington-Baltimore Metropolitan areas. Within 30 days after award of the Contract, the Contractor shall submit to the Architect for approval a list of manufacturers' material and equipment names, including their respective service agency, he proposes to use. In the event any service agency in the list fails to comply with the specification requirement, such service agency will be rejected.

1.18. SINGULAR NUMBER:

- A. Where any device or part of equipment is herein referred to in the singular number (such as "valve"), such reference applies to as many such devices as are required to complete the installation, shown, implied or otherwise, as indicated on the drawings.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. All materials shall be new, the best of their respective kinds, suitable for the conditions and duties imposed on them at the building and shall be of reputable manufacturers'. The description, characteristics, and requirements of materials to be used shall be in accordance with qualifying conditions established in the sections following.
- B. See Division 1 - General Requirements.
- C. All component parts of each item of equipment or device shall bear the manufacturers' name plate, giving name of manufacturer, description, size, type, serial or model number, electrical characteristics, etc., in order to facilitate the maintenance or replacement. The name plate of a subcontractor or distributor will not be acceptable. All equipment requiring electrical service shall be U.L. labeled, or if a U.L. label is not available from the manufacturer, the equipment shall be tested by an approved electrical testing company in accordance with NEC, and at no additional cost to the Owner. Submit data indicating compliance with standards prior to installation.
- D. In specifying materials, four general procedures are used. The four classifications are as follows:

GROUP 1: When the material or equipment is specified by name of other identifying information and one name brand only is used, it is considered that the use of that particular item is essential to the project, and the Contractor shall base his proposal on the uses of that item.

GROUP 2: When a material or equipment is specified by brand name and other identifying information and two or more brand names are named, it is considered that any one of the brands so named will be performed as desired, and the Contractor shall base his proposal on one of the named brands.

GROUP 3: When the material or equipment is specified with the phrase "... or equal..." after a brand name and other identifying information, it is intended that the brand name is used for the purpose of establishing a minimum acceptable standard of quality and performance and Contractor may base his bid proposal on any item which is in all respects equal to that specified and presents essentially



the same appearance, size, operation and performance. The Contractor shall be responsible for coordination of the equal product.

GROUP 4: When material is specified as complying with the requirements of published "Standard Specification" of trade associations, American Society for Testing and Material, government specifications, etc., the Contractor shall base his proposal on any item which can be shown to comply in all respects to the referred to "Standard Specification."

- E. It is distinctly understood: (1) that the Architect will use his own judgment in determining whether or not any materials, equipment or methods offered in substitution are equal to those specified and will fit within the space available; (2) that the decision of the Architect on all such questions of equality is final; and (3) that all substitutions will be made at no increases in cost to the Owner.
- F. Upon receipt of written approval from Architect, Contractor may proceed with substitution providing the Contractor assumes full responsibility for and makes, at his expense, any change or adjustment in construction or connection with any work that may be required by the substitution of such materials, equipment or methods. In the event of any adverse decisions by the Architect, no claim of any sort shall be made or allowed against the Owner.

## 2.2 PIPING SUPPORTS, GENERALLY:

- A. Piping shall be run parallel with the lines of the building unless otherwise shown or noted on drawings. The different service pipes, valves, and fittings shall be so installed that after the covering is applied there will not be less than 1/2 inch clear space between the finished covering of parallel adjacent pipes. Hangers on different service lines running parallel with each other and nearly together shall be in line with each other and parallel to the lines of the building. Exact location of electric outlets, piping, ducts, and conduits shall be coordinated among the trades so that there will be no interference between lighting fixtures, piping, ducts, and conduits. Where conflicts between the trades result, they shall be resolved by the Contractor to the Architect's satisfaction and at no expense to the Owner.
- B. Hangers shall be spaced so as to prevent sag and permit proper drainage and shall not be spaced more than 10 feet apart unless a greater space is definitely indicated herein or on the drawings. Hangers shall be placed within one foot of each horizontal elbow.
- C. Hangers shall be of manufacturers hereinafter specified in Section 15050. Unless otherwise specified, pipe and conduit hangers and hanger supports shall conform with the following Grinnel figures:
  - 1. Hangers generally shall be Fig. 69, 104, 212, 260 and 300.
  - 2. Hangers Figs. 295 and 212 shall be provided with turnbuckles and eye rods or rods with eye nuts.
  - 3. Turnbuckles shall be Fig. 230 and 114, shall have not less than 1-1/2 inch adjustment, and shall be provided with lockouts.
  - 4. Clamps shall be Fig. 261 or CT-121.
  - 5. Wherever the movement of pipe due to expansion exceeds 3/4 inch per foot of hanger rod length, hangers shall be Figs. 171, 174 and 181.

6. Roller supports shall be adjustable, Grinnel Fig. 274.
  7. Concrete inserts shall be Fig. 282 or 281.
  8. On copper pipes, hangers in contact with pipe shall be copper plated.
- D. In lieu of individual hangers, multiple (trapeze) hangers may be used for water pipes having same elevation and slope and for electrical conduits as specified hereinafter:
1. Horizontal members shall consist of 1-1/2 inch by 1-1/2 inch No. 12 gauge, cold formed electro-galvanized dipped channels designed to accept special springheld hardened steel nuts for securing hanger rods and other attachments. Provide metal framing system with applicable fasteners, brackets, fittings, clamps, etc. Two or more such channels may be welded together forming horizontal members of greater strength than single channels. Members shall be Kindorf Series B-995, Unistrut, or approved equal.
  2. Each multiple hanger shall be designed to support a load equal to the sum of the weights of the pipes and liquid, the weight of the hanger rods shall be such that the stress at the root of the thread will not be over 10,000 psi at design load, except that no rod shall be smaller than 3/8 inch. The size of the horizontal members shall be such that the maximum stress will not be over 15,000 psi at design load.
  3. Horizontal runs of piping along walls, 4 inch and smaller, exposed or concealed, shall be secured to metal framing system as specified herein. Provide appropriate clamps, brackets and similar attachments to secure piping to vertical members in accordance with applicable sections of the specification.
  4. On copper pipes in contact with horizontal member, provide rubber strip (Vibra Strip or equal) between hanger attachment and copper pipe.
- E. Hanger attachments shall be suitable for each type of hanger and shall be compatible with the building material to which it is secured. Under no circumstances shall pipe support be secured to any other mechanical, electrical or fire protection equipment. Support shall be suspended from building structure only. The type of attachments which shall be used for the various types of building construction encountered are as follows:
1. Steel beams - Fig. 226, or 66 attachments.
  2. Bar joists - Fig. 225, or 60.
  3. Brick or block walls - Fig. 194, 195, 199 or 202 fastened as follows: For light duty, self-drilling anchors in brick and toggle bolts in block; for heavy duty, through bolts with backing plates.
  4. Concrete (Existing ) - Phillips "Redhead" or Rawl self-drilling anchors or expansion bolts.
- F. On insulated piping at hangers, provide calcium silicate inserts and shields at each point of support, see Section 15050.

- G. In no case shall wire or perforated strap be used for pipe or conduit support.
- H. Secure all hangers for piping and ductwork to joist and beams. In no case shall supports be secured to underside of metal or wood deck unless otherwise directed in the field by the Architect. Contractor shall submit details of method of attachments for approval to the Architect.
- I. See Section 15050 for vibration hanger requirements.

#### 2.3 MOTORS:

- A. Provide motors of a size adequate to drive the equipment but in no case less than the size shown or specified. If a motor larger than that specified is required, the Contractor shall bear the expense of changes in foundations, support, wire and conduit connections, circuit protective devices, or other affected elements of the system. Each motor shall have sufficient capacity to start and operate the machine it drives without exceeding the motor nameplate rating at the speed specified or at the load which may be obtained by the drive actually provided. Motors shall be rated for continuous duty at 115 percent of rated capacity; base temperature rise on an ambient temperature of 40 degrees centigrade. Motors for use with variable frequency controllers shall be designed to withstand a rise time of 0.10 microseconds and a peak voltage of 1600 per NEMA MG1 Section 31.40.4.2.

#### 2.4 SLEEVES AND PLATES:

- A. Pipe sleeves through concrete and masonry construction shall be Schedule 40 galvanized steel pipes unless otherwise indicated on the drawings. Openings that cannot be sleeved before slab or wall is poured shall be core drilled. Pipe sleeves through drywall and similar construction shall be sized to pass both pipe and insulation, and where permitted by code, may be Schedule 40 PVC.
- B. Sleeves in existing concrete or masonry walls shall be set and secured with mortar grout and fast drying bitumastic sealant. Caulk the annular space of pipe sleeves with an elastic caulk compound to make installation air and water tight.
- C. Escutcheon plates shall be provided for all exposed pipes and conduits passing through walls, floors, and ceilings in finished areas. Plates shall be chrome plated brass of the split ring type, of size to match the pipe or insulation where installed. Where plates are provided for pipes passing through sleeves which extend above the floor surface, provide deep recessed plates to conceal the pipe sleeves.
- D. Except above suspended acoustical tile ceilings, provide 24 gauge galvanized sheet metal sleeves for all ductwork passing through floor, ceiling or wall construction. Duct sleeves shall be large enough to pass duct with insulation and shall have 1/2 inch flanges returned against the construction material.
- E. Where fire dampers are required, provide sleeves in compliance with code requirements, minimum 18 gauge galvanized sheet metal.
- F. At all sleeves where noise can be transmitted (Mechanical and Electrical Rooms), smoke barriers, walls above ceiling to underside of the structure of floor above, or at fire rated separations, seal openings between pipes and ducts and corresponding sleeve to prevent sound transmissions and maintain fire rating.

Utilize U.L. approved resilient sealant for penetration seals. Submit method of sealing for approval.

- G. Where watertight sleeves are indicated or required to suit the installation, provide Link Seal rubber seals, as manufactured by Thunderline Corporation, between pipes and sleeves.

### PART 3 - EXECUTION

#### 3.1. WORKMANSHIP:

- A. Each subcontractor shall furnish the services of an experienced superintendent who shall be constantly in charge of the installation of the work.
- B. The quality of the workmanship required for each trade in the execution of its work shall be the finest and highest obtainable in that trade working with the materials specified. Workmanship shall be satisfactory to the Architect and his decision as to acceptable quality if final.

#### 3.2. EQUIPMENT CONNECTIONS:

- A. All equipment shall be installed and connected in accordance with the best engineering practice and in accordance with manufacturer's instructions and recommendations. Auxiliary piping, valves, and electric connections recommended by the manufacturer or required for proper operation shall be provided.

#### 3.4. WATERPROOFING:

- A. Under no circumstances shall waterproofing be damaged or penetrated. Should conditions arise which indicate such necessity, notify the Architect.

#### 3.5. CUTTING AND PATCHING:

- A. Cutting and patching associated with the work in the existing structure shall be performed in a neat and workmanlike manner. Existing surfaces which are damaged by the Contractor shall be repaired or provided with new materials and methods similar to existing adjacent work, subject to approval of the Architect. Structural members shall not be cut or penetrated unless otherwise indicated on the drawings. Verify in the field with the Architect. Holes cut through concrete and/or masonry to accommodate new work shall be cut by reciprocating or rotary nonpercussive methods. Existing masonry block walls shall be patched with new masonry or gypsum board attached and sealed to both block faces.
- B. See General Conditions.

#### 3.6. SURVEYS AND MEASUREMENTS:

- A. Base all measurements (both horizontal and vertical) from established bench marks. All work shall agree with these established lines and levels. Verify all measurements at site and check correctness of same as related to the work. Verify locations of existing utilities and inverts of same prior to the start of any systems shown connecting to utilities.

- B. Should the Contractor discover any discrepancy between actual measurements or conditions and those indicated which prevent following good practice or the intent of the drawings and specifications, he shall notify the Architect and shall not proceed with his work until he has received instruction from the Architect.

3.7. HANDLING AND STORAGE OF MATERIALS:

- A. Proper and suitable tools, equipment and appliances for the safe and convenient handling and placing of all materials and equipment shall be used. During loading, unloading, and placing, care shall be taken in handling the equipment and materials so that no equipment or materials, including Owner furnished, are damaged.
- B. All mechanical and/or electrical equipment delivered to the job site shall be stored under roof or other approved covering, on pedestals above the ground. All enclosures for equipment shall be weatherproof. Any motors which are not totally enclosed, that are involved in the work, shall be stored in a heated area with a minimum temperature of 50 degrees Fahrenheit. All valves shall be stored under roof on wood pedestals above ground. All insulation shall be stored under roof or in trailers, adequately protected from the weather. The Contractor shall follow all written instructions and recommendations of the manufacturer and all requirements of the Architect in oiling, protection and maintenance of equipment during storage. It shall be the Contractor's complete responsibility for the storage and care of the equipment and materials.
- C. If any materials and/or equipment are found to be in poor condition at the time of being installed, the Architect may, at his discretion, order the Contractor to furnish and install new equipment at no cost to the Owner.

3.8. COOPERATION WITH OTHER TRADES:

- A. Exact location of air outlets, electric outlets, piping, ducts, and conduits shall be coordinated with all other trades so that there will be no interference between lighting fixtures, piping, ducts, and conduits. Where conflicts between the trades result, they shall be resolved by the Contractor to the Architect's satisfaction and at no expense to the Owner.
- B. Mechanical trades shall give full cooperation to other trades and shall furnish in writing, with copies to Architect all information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay. Exact location of all mechanical equipment in finished spaces shall be coordinated with shop drawings and with elevations indicated on the architectural drawings.

3.9. CLEANING AND PAINTING:

- A. Thoroughly clean all exposed surfaces of equipment and material and leave in a neat, clean condition ready for painting. Restore and touch-up factory finishes which have been damaged during construction. Finished painting will be performed under another Division.
- B. Miscellaneous requirements include:
  - 1. Provide complete new finish if, in the opinion of the Architect, the factory finishes are severely damaged.